Patent

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New Specification Pages 18, 19

be vertical or parallel with sides of a basket or screen support in which and/or on which a screen assembly is mounted or installed. As shown in Fig. 53A, in Fig. 54 and Fig. 55A, it is within the scope of this invention to cant a pin or pins inwardly from the side or wall of a basket, etc. so that, as a screen assembly is forced down around the pin(s) (e.g. by movable rails or by inflating bladder apparatus), the screen assembly's screening material is tensioned. Such downward movement of rails or bladders also effects seals along the sides of the screen assembly.

91. Fig. 54 shows another embodiment of a clamping system 860 according to the present invention which is similar to the system 840 (Fig. 53A) and like numerals indicate like parts; but the system 860 does not have the ledges 852 with the angled upper surfaces 856. Side supports 863 support the screen assembly 830 and the downward force of the rails 826 bends the edge portions 832 of the screen assembly 830 against an upper surface 867 of the side supports 863. Optionally pins 864, like the pins 854, Fig. 53A connected to crossmembers 815 extend into corresponding holes 865 in the rails 826. These pins 864 also extend through the holes 833 of the screen assembly 830.

92. Figs. 55A - 55C show a screen assembly clamping system 870 according to the present invention for a vibratory separator or shale shaker. Side ledges 872 (like the ledges 852, Fig. 53A) have upwardly projecting pins 874 that extend through corresponding holes in edge portions of a screen assembly 830. Each ledge 872 has a non-horizontal angled upper surface 876. Bladders 882 of bladder apparatuses [bladders shown both uninflated (flattened, 882a) and inflated (oval, 882b) in Figs. 55A and 55b] press down on screening material of the screen assembly 830 and bend the edge portions into conformity with the angle of the upper surfaces 876 of the ledges 872, thus "crowning" the screen assembly 830 (as do the piston mechanisms and rails 40 in the system of Figs. 52C and 53A) and tensioning the screening material.

93. As shown in Fig. 55B air from a pressurized air source PS provides air under pressure for inflating the bladders 882.

94. As shown in Fig. 55C, the screen assembly 830 may, optionally, have side lips or hooks 830c which are selectively releasably positionable in gaps 830d between brackets 882x holding the bladders 882 and side walls 882z of a vibratory separator. Any known shape or configuration for any known hookstrip and/or hooks may be used with associated well-known hook or hookstrip holding apparatus.

95. Fig. 55C shows a system 870a like the system 870, Fig. 55A, and like numerals indicate like parts; but the system 870a does not have the ledges 872. Side supports 877 support the screen assembly 830 and the downward force of the bladders 882 bends the edge portions 832 of the screen assembly 830 against an upper surface 878 of the side supports 877.

96. Fig. 56 shows a shale shaker 890 according to the present invention which has a screen mounting basket 891; vibration apparatus 892 connected to the basket 891; a mounting skid 893 spring mounts 894 (two on each side) connecting the basket 891 to the skid 893; and a lower receptacle 895 which receives fluid passing through screen assemblies 896a and 896b.

97. Piston mechanisms 897 (like the piston mechanisms described above) releasably hold the screen assemblies 896a and 896b in place.

98. Fluid is introduced onto the screen assembly 896a from a tank or "possum belly" 898. Separated solids progress up the screen 896a and are discharged onto the screen assembly 896b. Following further fluid separation, the solids move up and off of the screen assembly 896b and are discharged from the shale shaker 890. Hydraulic fluid to power the piston mechanisms is provided in lines 899a, 899b, 899c, and 899f from a pressurized source 899d.

99. Fig. 57 shows a manually operable apparatus 895 for moving rails 826. Members 896 with handles 897 and cam surfaces 898